

1. Simplify the expression below into the form $a + bi$. Then, choose the intervals that a and b belong to.

$$(-9 + 6i)(-3 - 7i)$$

- A. $a \in [27, 36]$ and $b \in [-42.6, -39.8]$
 - B. $a \in [63, 72]$ and $b \in [42.5, 48.1]$
 - C. $a \in [63, 72]$ and $b \in [-45.8, -44.8]$
 - D. $a \in [-15, -12]$ and $b \in [77.3, 81.3]$
 - E. $a \in [-15, -12]$ and $b \in [-81.8, -80.1]$
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2. Simplify the expression below and choose the interval the simplification is contained within.

$$2 - 14^2 + 15 \div 1 * 13 \div 11$$

- A. $[-193.9, -191.9]$
 - B. $[196.1, 205.1]$
 - C. $[-182.27, -169.27]$
 - D. $[214.73, 220.73]$
 - E. None of the above
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3. Choose the **smallest** set of Complex numbers that the number below belongs to.

$$\frac{0}{-12\pi} + \sqrt{6}i$$

- A. Rational
- B. Pure Imaginary
- C. Not a Complex Number
- D. Nonreal Complex
- E. Irrational

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4. Choose the **smallest** set of Real numbers that the number below belongs to.

$$\sqrt{\frac{64}{121}}$$

- A. Whole
 - B. Irrational
 - C. Not a Real number
 - D. Integer
 - E. Rational
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5. Simplify the expression below and choose the interval the simplification is contained within.

$$14 - 9^2 + 3 \div 7 * 8 \div 4$$

- A. $[95.76, 96.27]$
 - B. $[-66.87, -65.79]$
 - C. $[94.97, 95.85]$
 - D. $[-67.26, -66.98]$
 - E. None of the above
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6. Choose the **smallest** set of Real numbers that the number below belongs to.

$$-\sqrt{\frac{484}{49}}$$

- A. Rational
- B. Whole
- C. Irrational
- D. Integer

E. Not a Real number

7. Simplify the expression below into the form $a + bi$. Then, choose the intervals that a and b belong to.

$$\frac{-18 - 55i}{1 - 6i}$$

- A. $a \in [-18.5, -17.5]$ and $b \in [8, 9.5]$
B. $a \in [311, 313]$ and $b \in [-5.5, -3.5]$
C. $a \in [7.5, 9.5]$ and $b \in [-5.5, -3.5]$
D. $a \in [-9.5, -8.5]$ and $b \in [0.5, 2.5]$
E. $a \in [7.5, 9.5]$ and $b \in [-163.5, -162]$
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8. Simplify the expression below into the form $a + bi$. Then, choose the intervals that a and b belong to.

$$\frac{45 - 88i}{-3 + 4i}$$

- A. $a \in [-20.5, -18]$ and $b \in [1.5, 5]$
B. $a \in [-16, -14.5]$ and $b \in [-22.5, -21.5]$
C. $a \in [-487.5, -486]$ and $b \in [1.5, 5]$
D. $a \in [7.5, 10]$ and $b \in [17, 18]$
E. $a \in [-20.5, -18]$ and $b \in [83.5, 85]$
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9. Simplify the expression below into the form $a + bi$. Then, choose the intervals that a and b belong to.

$$(4 + 6i)(3 + 10i)$$

- A. $a \in [69, 79]$ and $b \in [22, 29]$
B. $a \in [-49, -46]$ and $b \in [-59, -56]$

- C. $a \in [11, 18]$ and $b \in [60, 68]$
 - D. $a \in [69, 79]$ and $b \in [-25, -16]$
 - E. $a \in [-49, -46]$ and $b \in [58, 59]$
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10. Choose the **smallest** set of Complex numbers that the number below belongs to.

$$\frac{\sqrt{165}}{8} + \sqrt{-10}i$$

- A. Irrational
 - B. Rational
 - C. Not a Complex Number
 - D. Nonreal Complex
 - E. Pure Imaginary
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